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Clinico-epidemiological study of gastroesophageal cancer at Clinical Oncology Department, Tanta University Hospitals

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ORIGINAL ARTICLE

Clinico-epidemiological study of gastroesophageal cancer at Clinical Oncology Department, Tanta University Hospitals

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ABSTRACT

Background: Esophageal cancer is the ninth most diagnosed cancer type worldwide and the sixth most common cause of cancer-related deaths worldwide. Gastric cancer is the fifth most diagnosed cancer type worldwide and the fourth leading cause of cancer-related deaths after lung, colorectal, and liver cancers. Aim: Describe the clinical-epidemiological and pathological pattern of gastro-esophageal cancer and evaluate treatment output (survival details). Patients and Methods: This retrospective study included all esophageal, gastroesophageal, and gastric cancer cases presented to the Clinical Oncology Department, Tanta University, between January 2015 and December 2019. Among 8975 patients presented during that period, there were 200 cases of esophageal, gastro-esophageal, and gastric cancer. Their files were revised, and all documented data were classified. Results: Median overall survival for all patients regardless of tumor site and stage was 10 months (95%CI, 7.187-12.813) while median OS for patients who underwent curative surgical approach with the addition of chemotherapy ± RTH, was15 months (95%Cl 13.313 -16.687) and their median DFS was 10 months (95% Cl, 8.570 - 11.430) with 1 year OS was 85%, 11 % respectively. All these patients developed recurrence/metastasis. All patients with loco-regional disease who were treated with definitive CCRTH had a median OS18 months (95% CI, 16.754 -19.246). These patients developed progression with a median PFS of 12 months (95% CI, 11.208 -12.792). All patients with metastatic disease treated with palliative intent had median OS and PFS for 5 months (95% CI, 4.404 - 5.592) and 2 MS (95% CI, 1.571 - 2.429), respectively. Conclusion: Gastric cancer ranked first among the patients analyzed in the last five years, followed by esophageal cancer and then gastro-esophageal cancer. Cancer of all three sites is more common in the age group 40-80 years with a median age of 57-60 years and presented mainly in the advanced stage.

Keywords: Adenocarcinoma, Gastro-Esophageal Cancer, Squamous Cell Carcinoma

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INTRODUCTION

Esophageal cancer is the ninth-most diagnosed cancer worldwide and the sixth-most common cause of cancer-related deaths worldwide (Sung et al., 2021). Gastric cancer is the fifth most diagnosed cancer worldwide and the fourth leading cause of cancer-related deaths after lungs, colorectal, and liver cancer. Recent studies of gastric cancer incidence and mortality rates showed a continued decline worldwide over the past five decades due to socioeconomic development and better access to diagnostic and treatment facilities (Luo et al., 2017). According to GLOBOCAN 2020, the incidence of esophageal cancer constitutes 3.1% of all cancer diagnoses worldwide, while gastric cancer is 5.6% of all cancer diagnoses. Esophageal cancer mortality accounts for 5.5%, while gastric cancer mortality constitutes about 7.7% of all cancer deaths. Most individuals with esophageal cancer are aged 50 -60 years (Dawsey et al., 2010). Gastric cancer occurs mainly in adults aged 55-80 years and is rare at the age of less than 50 years. Incidence rates for gastroesophageal cancer are two-fold to three-fold higher in men than in women. The highest incidence and mortality rates of esophageal cancer are in the



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Eastern Asian and Eastern African regions, while the highest incidence and mortality rates of gastric cancer are observed in Eastern Asia and Eastern Europe (Ferlay et al., 2018). In Egypt, the annual incidence of cancer per 100,000 people represents 1.7% and 1% for men and women, respectively, for esophageal cancer and 2% and 1.5% in men and women, for gastric cancer (El Mazny et al., 2019). The largest number of gastric cancer cases originates from the pyloric antrum region (Komolafe et al., 2008). Gastric adenocarcinoma is the most common type and constitutes 90% of all gastric tumors. Approximately 5% of gastric cancers are lymphomas. Carcinoid and stromal tumors are uncommon (Robbins et al., 2010). Adenocarcinoma and squamous cell carcinoma are the two main subtypes of esophageal cancer, representing about 90-95% of all esophageal cancers. Squamous cell carcinoma is more common in developing countries, while esophageal adenocarcinoma is more common in developed countries (Arnold et al., 2015).

Globally, about 87% of all esophageal cancers are squamous cell carcinoma, with 11% constituting adenocarcinoma. There are other rare types of esophageal cancer, such as leiomyosarcoma,

malignant melanoma, rhabdomyosarcoma, and lymphoma (Sung et al., 2021). Esophageal adenocarcinoma is found to be related to Barrett's esophagus and occurs in the distal third of the esophagus and at the oesophagogastric junction, while squamous cell carcinoma tends to occur in the proximal two-thirds of the esophagus (Ilson and van Hillegersberg, 2018). Despite chronic infection with Helicobacter pylori being considered the most associated risk factor for gastric cancer and detected in about 89% of gastric cancer cases (González et al., 2012), it is associated with a reduced risk of esophageal adenocarcinoma as much as 50% (Islami and Kamangar, 2008). Gastroesophageal reflux disease and obesity are associated with an increased esophageal adenocarcinoma, risk of gastroesophageal junction, and gastric cardia cancers (González et al., 2012). Tobacco smoking, low socioeconomic status, high intake of salty and smoked food, and alcohol consumption are associated with increased risk of esophageal squamous cell carcinoma and gastric cancers (Clinton et al., 2020). Gastroesophageal cancer is considered an important public health challenge and a significant cause of cancer-related deaths worldwide, as most tumors are diagnosed at a late stage and rapidly progress to an advanced incurable stage (Arnold et al., 2019). H. pylori eradication plays a major role in decreasing gastric cancer incidence (Fuccio et al., 2009). Early-stage detection of gastroesophageal cancer remains the best method to improve cure and survival rates (Lopes and Fagundes, 2012). Healthy lifestyles such as diet varied in fruit and vegetables, decreasing intake of salty, smoked, and very hot foods, physical activity, and controlling tobacco and alcohol consumption are effective strategies for improving the quality of life of gastro-esophageal cancer survivors and for lowering the risk of developing gastroesophageal cancer (Lopes and Fagundes, 2012). This study aimed to describe the clinical-epidemiological and pathological pattern of gastro-esophageal cancer and to evaluate treatment output (survival details).

PATIENTS AND METHODS

This is a retrospective study of esophageal, gastroesophageal junction, and gastric cancer that was carried out at the Clinical Oncology Department, Tanta University, throughout the period from January 2015 to December 2019, with the final analysis in December 2021. Among 8975 patients presented during that period, there were 200 cases of esophageal, gastro-esophageal, and gastric cancer. Files with missing data were neglected, and the remaining 116 cases were included in the data analysis as classified. The medical files were revised for detailed medical history, sociodemographic

profile, organ involved, histological characteristics of the tumor, and treatment.

History

Personal history (age, sex, occupation, residence, marital status, personal habits, e.g., smoking, etc.).

History of illness (malignant disease) and other comorbidities (e.g., Gastroesophageal reflux disease, Helicobacter pylori infection, diabetes mellitus, hypertension, cardiac disease, etc.).

Family history

- Clinical examination: General appearance, vital signs, head & neck, chest, abdomen & pelvic, upper & lower limb examination.
- Investigations: Pathological findings: through endoscopic biopsy or surgical resection, laboratory investigations: complete blood count, liver function tests, renal function tests, stool occult blood test, radiological investigations: All available radiological tests were revised and recorded including (Barium swallow, barium meal, endoscopic ultrasound, CT abdomen and pelvis, CT Chest, PET/CT and Bone scan).
- Lines of Treatment: For esophageal cancer with locoregional disease: distal esophagectomy, perioperative chemoradiation, and definitive chemoradiation. For GEJ cancers with locoregional disease, there are many lines of treatment approaches. They include esophagectomy combined with partial gastrectomy or extended total gastrectomy, perioperative chemoradiation, and definitive chemoradiation. For gastric cancer with locoregional disease: partial or total gastrectomy, perioperative chemoradiation. Patients with advanced diseases of the three sites of cancers (esophageal, GEJ, and gastric cancers) received systemic chemotherapy only or combined with palliative/supportive care (e.g., urgent tracheostomy, esophageal stent insertion, and gastro-jejunostomy).

Statistical methods

The data was collected, compiled, and analyzed using percentage, mean, and median using the statistical package for Social Science (SPSS) version 17. Kaplan-Meier Survival curve was used to evaluate: overall survival (OS): It is measured by the period between diagnosis of the disease and death for any cause (including tumor progression) or till the last follow-up, disease-free survival (DFS): It is measured by the period between the start of treatment and recurrence either locally or at a distant site or till the last follow up, used for patients treated with curative intent, progression-free survival (PFS): It is measured by the period between start of treatment and progression of the disease or till the last follow up, used for patients treated with definitive CCRTH or with palliative intent.

RESULTS

Table 1 shows that esophageal, GEJ, and gastric cancer represent only 2.2 of all types of cancers throughout the period between January 2015 and December 2019. Table 2 shows that gastric cancer represents (132/8975) 1.5 % of all types of cancer, oesophageal cancer represents (48/8975) 0.5%, while gastro-oesophageal junction cancer represents (20/8975) 0.2%. Gastric cancer ranked first among the analyzed patients in the last five years at 66%, followed by esophageal cancer, which represents 24%, and then gastro-esophageal junction cancer at 10% of all analyzed patients. Table 3 shows that adenocarcinoma is the most common pathological type of gastric cancer and gastroesophageal junction cancer, while adenocarcinoma and SCC are equal in patients with esophageal cancer. Grade III is the most common grade for GEJ and gastric cancer, while grade II is the most common grade for esophageal cancer. Table 4 shows that stage III was presented in esophageal cancer at 36.7% while stage IV was the most common stage in gastro-esophageal at 47.4 % and gastric cancer at 67.2%.

Overall survival for all cases according to treatment intent

Patients managed with curative surgical intent were 27 patients, had a median overall survival of 15 months (CI 95% 13.313 – 16.687) with a 1-year overall survival was 85%. 26 patients with locoregional disease were treated with definitive CCRTH (DCCRTH) were 26 patients. These patients had a median OS of 18 months (95% CI, 16.754 -19.246) with a 1-year overall survival of 92%. Patients with metastatic disease and treated with palliative intent were 63 patients with a median OS of 5 months (95% CI, 4.408 - 5.592) (Figure 1).

Progression-free survival analysis for all cases

All patients treated with definitive CCRTH developed progression with a median PFS of 12 months (95%CI, 11.208 -12.792), while patients treated with palliative intent were 63 patients with a median PFS of 2 months (95%CI, 1.571 - 2.429) (Table 6, Figures 4-6).

Disease-free survival analysis for all cases managed with curative intent

All patients treated with curative surgical intent developed recurrence/metastasis with a median DFS of 10 months (95% CI, 8.570 – 11.430) and a 1-year DFS of 11 % (Table 5, Figures 2,3).

DISCUSSION

Gastro-esophageal cancers represent a significant part of cancer incidence globally, according to the available WHO statistics. Esophageal cancer is the ninth most common malignancy worldwide with the sixth-highest cancer mortality, while gastric cancer represents greater disease incidence and accounts for the fifth most common cancer and the fourth cause of cancer mortality worldwide (Sung et al., 2021).

In the present study, we aimed to describe various clinical-epidemiological aspects of gastroesophageal cancers with the evaluation of the applied treatment outcome (survival details).

This is a retrospective study that included all esophageal, gastroesophageal junction, and gastric cancer cases presented to the Clinical Oncology Department, Tanta University Hospital, throughout the period between January 2015 and December 2019. Among 8975 cases, there were 200 cases of esophageal, GEJ, and gastric cancer whose files were revised, and all documented data were classified. Files with missing data were neglected while the remaining files of 116 cases were gathered, and their data were included in the data analysis.

In this study, gastric cancer represents 1.5 % (132/8975) of all types of cancer, esophageal cancer represents 0.5% (48/8975), and gastro-esophageal junction cancer represents 0.2% (20/8975). The previous figures are lower than the reported by the GLOBOCAN estimates of cancer incidence in 2020, which recorded gastric cancer and esophageal cancer incidence of 5.6% and 3.1%, respectively (Sung et al., 2021). This difference could be attributed to different types of dietary habits and the prevalence of alcohol intake abroad. Among the included cases, gastric cancer was more common than esophageal cancer and gastroesophageal junction cancer and accounted for 66% of cases versus 24% and 10% for esophageal and gastroesophageal junction cancer, respectively. Regarding sex and age, esophageal and gastroesophageal junction cancer were more common in males, while gastric cancer was more common in females.

Year	-	Include	ed cases	Cases for analysis		
	Total cases	No.	%	No.	%	
2015	2154	38	1.8%	19	50.0%	
2016	1810	43	2.4%	21	48.8%	
2017	1787	47	2.6%	27	57.4%	
2018	1502	30	2.0%	17	56.7%	
2019	1722	42	2.4%	32	76.2%	
Total	8975	200	2.2%	116	58.0%	

Table 1. Distribution of the patients studied per year

Table 2. 🛛	Distribution	of the	studied	patients	according	to site	of tumor	per year
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	All Cases					Cases for analysis						
Year	Esophageal carcinoma		Cancer in GE junction		Gastric cancer		Esophageal carcinoma		Cancer in GE junction		Gastric cancer	
	No.	%	No	%	No	%	No.	%	No.	%	No.	%
2015	15/38	39.5%	2/38	5.2%	21/38	55.3%	9/19	47.4%	2/19	10.5%	8/19	42.1%
2016	14/43	32.5%	3/43	7.0%	26/43	60.5%	7/21	33.3%	3/21	14.3%	11/21	52.4%
2017	12/47	25.5%	5/47	10.6%	30/47	63.8%	6/27	22.2%	5/27	18.5%	16/27	59.3%
2018	4/30	13.3%	3/30	10.0%	23/30	76.7%	5/17	29.4%	2/17	11.8%	10/17	58.8%
2019	3/42	7.1%	7/42	16.7%	32/42	76.2%	3/32	9.4%	7/32	21.9%	22/32	68.7%
Total	48/200	24.0%	20/200	10.0%	132/200	66.0%	30/116	25.9%	19/116	16.4%	67/116	57.7%

Table 3.	Pathological	types	according	to	the	tumor	site
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Dathology	Esophageal o	carcinoma (n.= 30)	Cancer in G	junction (n.= 19)	Gastric carcinoma (n.= 67)		
Pathology	No.	%	No.	%	No.	%	
Adenocarcinoma	15	50.0%	15	78.9%	67	100%	
SCC	15	50.0%	4	21.1%	0	0.0%	
Grade							
Grade I	2	6.7%	1	5.2%	2	3.0%	
Grade II	17	56.7%	5	26.3%	22	32.8%	
Grade III	11	36.7%	9	47.4%	40	59.7%	
Grade IV	0	0.0%	4	21.1%	3	4.5%	

Table 4: Clinical staging of patients according to tumor site

Stago		Esophageal	carcinoma (N= 30)	Gastroesopha	geal junction (N= 19)	Gastric carcinoma (N= 67)		
31	age	No.	%	No.	%	No.	%	
Stage I	Stage IB	2	6.7%	1	5.3%	0	0.0%	
Stago II	Stage IIA	4	13.3%	0	0.0%	1	1.5%	
Stage II	Stage IIB	4	13.3%	4	21.0%	3	4.5%	
	Stage IIIA	8	26.7%	4	21.0%	7	10.4%	
Stage III	Stage IIIB	2	6.7%	1	5.3%	5	7.5%	
	Stage IIIC	1	3.3%	0	0.0%	6	8.9%	
Stage IV	Stage IV	9	30.0%	9	47.4%	45	67.2%	

Table 5. Overall survival analysis according to tumor site

	Median survival (months)	95% CI		1-year overall survival
Esophageal cancer	16.0	13.316	18.684	67%
GEJ cancer	13.0	7.668	18.332	53%
Gastric cancer	7.0	4.539	9.461	27%

 Table 6. Disease-free survival analysis according to tumor site

	Number of patients	Median survival (months)	95	% CI
Esophageal cancer	1	11.0		
GEJ cancer	4	10.0	9.151	10.849
Gastric cancer	22	9.0	6.711	11.289

Table 7. Progression-free survival analysis according to tumor site

Type of tumor	Treatment intent	Number of patients	Median survival (months)	95%	% CI
Esophageal cancer	Definitive CCRTH	20	12.0	10.926	13.074
	Palliative intent	9	2.0	0.614	3.386
CE1	Definitive CCRTH	6	11.0	9.400	12.600
GETCANCEL	Palliative intent	9	2.0	1.270	2.730
Gastric cancer	Palliative intent	45	2.0	1.571	2.820



Figure 1. Overall survival for all cases according to treatment intent



Figure 2. DFS in cases treated with curative surgical intent



Figure 3. DFS for patients treated with curative surgical intent according to tumor site



Figure 4. PFS for all cases according to treatment intent



Figure 5. PFS for cases treated with palliative intent



Figure 6. PFS for cases treated with definitive CCRTH.

However, we couldn't find any clear difference between the incidence of all three sites of cancer with age, but these cancers are more common in the elderly with a median age of 57-60. These results were consistent with some authors and inconsistent with others. Asombang et al. (2019) reported that esophageal cancer was more common in males, which matched with our results, and Gaballah et al. (2016) reported that gastric cancer also was more common in males rather than females. However, most of the published studies revealed that all three sites of cancer were more common in the elderly which matched with previous studies (Gaballah et al. 2016, Ferlay et al. 2018, Asombang et al. 2019 and Yasmina et al. 2023) with median age 52, 56, 60, 60 and 61 years respectively.

Regarding residency, our study revealed that esophageal and gastro-esophageal junction cancer were more common in rural areas (56.7% and 63.2%, respectively), while gastric cancer was more common in urban areas (76.1%). This difference could be related to dietary habits and lifestyle, such as the consumption of fast food and hot drinks. Mustafa et al. (2016) supported our results and concluded that esophageal cancer is more common in rural areas. Darwish et al. (2016) also reported that gastric cancer is more common in urban areas and this study is consistent with our result.

Regarding pathology, our study revealed that adenocarcinoma was the commonest pathological type of gastric cancer and gastroesophageal junction cancer (100% and 78.95% respectively), while SCC and AC were the most common pathologic types of esophageal cancer with an equivalent number of cases. Our results were matched with almost all studies like Ajani et al. (2017) and Yasmina et al. (2023) for gastric cancer and data from the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) (Coleman et al., 2018) Program for gastro-esophageal junction cancer that concluded that adenocarcinoma was the commonest pathological type for both sites of cancer. For esophageal cancer, our results were matched with many authors, including Pennathur et al. (2013), Jung et al. (2020), and Castro et al. (2014), who reported that SCC and AC were the most common types of esophageal cancer. However, there was some difference in the prevalence of the pathological type of esophageal cancer, Coleman et al. (2018) reported that AC was more common than SCC in many Western countries, Jung et al. (2020) reported that SCC was the commonest pathological type while Nouikh et al. (2019) concluded that AC and SCC were equal in number.

Regarding tumor site, our study revealed that the pyloric region (71.6%) was the most common site of gastric cancer, while the lower third esophagus (46.7%) was the most common site of esophageal cancer. Our results were matched with many published studies like Ramez et al. (2021), who reported that the pyloric region was the most common site for gastric cancer, and Zhang (2013) revealed that the lower third esophagus was the most common site for esophageal cancer.

The stage was reviewed, and unfortunately, we found that cancer in all three sites was presented in an advanced stage. Stage IV was the most common stage of gastric and gastro-esophageal cancer (67.2% and 47.4%, respectively), while stage III was the most common stage of esophageal cancer (36.7%). These findings were supported by many authors like Zeeneldin et al. (2014), who reported that stage IV was the most common stage of gastric cancer, and Mustafa et al. (2016) reported that stage III was the most common stage of esophageal cancer. However, some authors like Then et al. (2020) revealed that stage IV was the most common stage of esophageal cancer.

The site of distant metastasis was reviewed. The liver was the most common site of metastasis in gastric cancer (37.3%) and gastro-esophageal cancer (15.8%), while the lung was the most common site of metastasis in esophageal cancer (20.0%). Our results

agreed and disagreed with many authors. Riihimäki et al. (2016) reported that the liver was the most common site of metastasis in gastric cancer, and Verstegen et al. (2020) reported that the liver was the most common metastatic site for esophageal cancer. However, some authors reported that distant lymph nodes were the commonest site of metastasis in gastric cancer like Verstegen et al. (2020) and in esophageal cancer like Shaheen et al. (2017), Zeeneldin et al. (2017) also didn't agree with our results as it reported that the lung was the most common site of metastasis in gastric cancer.

On reviewing the treatment approach of esophageal cancer, we found that 66.7% of patients still had loco-regional diseases that were managed with definitive CCRTH, while 3.3% underwent distal esophagectomy. The higher percentage of definitive CCRTH was primarily due to tumor site, patients' choice due to serious complications of surgical operation, and in a few cases due to physical unfitness for surgery. The trend towards definitive CCRTH for esophageal cancer was also reported by many authors like Birkmeyer et al. (2002), who reported that only 5 patients underwent radical esophagectomy for 3 years (2000-2002) and Nouikh et al. (2019) also reported that most of the early stages of esophageal cancer managed with definitive CCRTH (42% for CCRTH versus 3% for surgery). However, Jung et al. (2020) reported that the patients managed by surgery were 31.3% versus 27% of patients managed by definitive CCRTH, and that could be due to a higher percentage of lower third esophageal cancer cases in these theories.

During the review of the treatment approach for gastric cancer, we found that 32.8% of patients (22 patients) had the loco-regional disease and were managed with curative surgical intent. We reported that most patients underwent distal gastrectomy in 22.4% of all cases (15 patients), and this result could be due to the commonest site of gastric cancer, which was the pyloric region.

On reviewing the radiotherapy part of the treatment of esophageal, GEJ, and gastric cancer either in the adjuvant or definitive setting, we reported that 34.5% of patients received RTH, and the total dose ranged from 4500 cGy to 5040 cGy, representing 25.9% and 6%, respectively. The dose range in our theory is slightly lower than that reported by some authors like Brower et al. (2016), who delivered a total dose of 5000 to 5040 cGy and > 5040 cGy to 55.7% and 44.3% of all cases, respectively. However, some authors delivered a dose range close to our dose, like Nouikh et al. (2019), who delivered a total dose of 5040 cGy for 38% of all cases treated with CCRTH. On the other hand, some authors delivered a dose range markedly higher than our dose, like Koh et al. (2020), who delivered a median dose of 5580 cGy. The reported minimal decrease in the dose range in our study apparently could be related to the treatment of morbidities like dysphagia and oral mucositis.

On reviewing the chemotherapy part of the treatment of esophageal, GEJ, and gastric cancer either in perioperative, adjuvant, or concurrent CRT settings, we reported that fluoropyrimidine/ platinum doublet was used in all patients. Fluoropyrimidine, either 5-FU or Xeloda, was used almost equally while platinum was used in most cases for concurrent CRT. However, few cases were treated with triplet regimens with the addition of Taxans to Fluoropyrimidine and platinum. The most used regimens in our study were FLOT, FOLFOX & DCF. These regimens were reported in many studies to be the first choice in perioperative, adjuvant, and concurrent CRT in esophageal, GEJ, and gastric cancer like Zeeneldin et al. (2017), who delivered fluoropyrimidine/platinum doublet in these sites of cancers.

The role of chemotherapy was also clarified in the metastatic setting of esophageal, GEJ, and gastric cancer. Palliative chemotherapy was delivered to 51.7% of patients in our theory in the form of triplet, doublet, and single-agent regimens. Fluoropyrimidine /platinum doublet was mostly used with the addition of taxon as triplet regimens in patients. eligible fit However, single-agent Fluoropyrimidine, either Xeloda or 5fu/calcium leucovorin, was used alone in vulnerable patients. Nouikh et al. (2019) reported that 5FU-cisplatin and FOLFOX were the most common regimens used for metastatic esophageal cancer. Cunningham et al. (2008) reported that Xelox) Xeloda and oxaliplatin were the most common protocols used for metastatic gastric cancer. Gaballah et al. (2016) reported that DCF (Docetaxel-cisplatin-5FU) 5FU/LCV was the most common protocol used for metastatic gastric cancer.

Regarding overall survival, our results revealed that esophageal cancer patients, regardless of stage, lived longer than GEJ and gastric cancer patients. The median overall survival for esophageal cancer was 16 months (95%CI,13.316-18.684) with one year OS was 67% while the median overall survival for gastroesophageal cancer and gastric cancer was 13 months (95%CI, 7.668 – 18.332) and 7 months (95% CI, 4.539-9.461) respectively with one year OS 53% and 27% respectively. Our result was better than that reported by Mmbaga et al. (2018), with the median OS for all esophageal cancer patients was 6.9 months (95% CI, 5.0 - 12.8), while Nouikh et al. (2019) was better than our result and reported that OS for esophageal cancer patients was 18months. Our explanation for their difference could be related to the number of early stages versus the advanced ones. However, Zeeneldin et al. (2017), on reviewing the survival rate of gastric cancer patients, reported that the median OS was 6 months (95% CI, 3.3–8.7), which is nearly consistent with our result.

On reviewing the survival outcomes of esophageal, GEJ, and gastric cancer patients who underwent curative surgical approach with the addition of chemotherapy ± RTH. We reported that 27 patients underwent R0 and R1 resection. Their median overall survival was 15 months (CI 95% 13.313 - 16.687), and median DFS was 10 months (95% CI, 8.570 -11.430) with 1 year OS was 85%, 11%, respectively, all these patients' developed recurrence/metastasis. Sub-group analysis revealed that the median DFS of esophageal cancer was better than that for GEJ and gastric cancer patients, and it was 11 ms, 10 ms (95%Cl, 9.151-10.849), and 9 ms (95%Cl, 6.711-11.289), respectively. Many authors reported a better survival outcome for patients treated with a curative approach to surgery than that reported in our study. Zeeneldin et al. (2017) reported that the median OS for gastric cancer patients who managed with curative intent was 35 months with a median DFS of 17 months (95% CI, 5.4 -28.6). Pape et al. (2021) reported that the median OS and DFS for esophageal cancer managed with curative intent were 29.4 and 19.2 months, respectively. Our explanation for their better surgical outcome difference may be due to better surgical maneuvers and high post-operative care.

Upon reviewing the survival outcomes of esophageal and GEJ cancer patients with loco-regional disease who didn't undergo surgery, we reported that 26 patients were treated with definitive chemoradiotherapy (20 esophageal cancer patients and 6 GEJ cancer patients). These patients had a median OS of 18 months (95% CI, 16.754 - 19.246). All these patients developed progression with a median PFS of 12 months (95% CI, 11.208 -12.792). Subgroup analysis revealed that PFS for esophageal cancer was slightly better than that of GEJ cancer. It was 12ms (95%Cl, 10.926 - 13.074) and 11ms (95%CI, 9.400-12.600), respectively. Ito et al. (2022) reported that the median OS of esophageal cancer patients treated with definitive chemoradiotherapy (CCRTH) was 23.1 months (95% CI, 15.9-49.0) with a median progression-free survival (PFS) of 8.2 months (95% CI, 5.8-10.2). This result didn't match our findings.

On reviewing the survival outcome of esophageal, GEJ, and gastric cancer patients with metastatic

disease, we reported that 63 patients were treated with palliative intent. Their median OS and PFS were 5 months (95% CI, 4.408 - 5.592) and 2 ms (95% CI, 1.571 - 2.429), respectively. Many authors reported a better survival outcome for patients with metastatic disease than that reported in our study. Zeeneldin et al. (2017) revealed that the median OS and PFS for metastatic gastric cancer were 6 ms (95% CI,3.3-8.7) and 3 months (95% CI, 2.2 -3.8), respectively. Shi et al. (2013) reported that the median OS and PFS for metastatic esophageal cancer were 15.5 months (95% CI 7.6 - 23.4 months) and 6.2 months (95% CI 4.0 - 8.4 months), respectively. Our explanation for their better survival outcomes could be due to the advanced treatment approach used, like immunotherapy.

CONCLUSIONS

The median overall survival for all patients regardless of tumor site and stage was 10 months (95%Cl, 7.187-12.813) while the median OS for patients who underwent curative surgical approach with the addition of chemotherapy ± RTH, was15 months (95%CI 13.313 - 16.687) and their median DFS was 10 months (95% CI, 8.570 - 11.430) with 1 year OS was 85%, 11 % respectively. All these patients developed recurrence/metastasis. All patients with loco-regional disease who were treated with definitive CCRTH had a median OS18 months (95% CI, 16.754 -19.246). All these patients developed progression with a median PFS of 12 months (95% CI, 11.208 -12.792). All patients with metastatic disease who were treated with palliative intent had median OS and PFS for 5 months (95% CI, 4.404 - 5.592) and 2 ms (95% Cl, 1.571 - 2.429), respectively.

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CONFLICT OF INTEREST

None.

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